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10/763,311	01/23/2004	Luis Felipe Cabrera	13768.484	6532

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EXAMINER

NGUYEN, PHILLIP H

ART UNIT	PAPER NUMBER
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2191

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/763,311

Applicant(s)

CABRERA ET AL.

Examiner

Phillip H. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20040123.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the original filing date of January 23, 2004. Claims 1-30 are pending and having been considered below.

Note

2. Regarding claims 1, 3, 4, 6, 8, 11, 14, 16, 17, 19, 21, 24, 31, and 32, recite phrase "capable of" or "for" in the body and preamble of the claims. They are indicate intended use and such are not carry patentable weight. The limitations following the phrase "capable of" or "for" describe only intended use but not necessarily required any functionality of the claims. Applicant is suggested to amend the claims so that the claim limitations are recited in a definite form in order for Examiner to give patentable to those limitations. For example, claim 1 recites "one or more processors capable of executing" should be changed to "one or more processors to execute".

Claim Objections

3. Claim 27 is objected to because of the following informalities: There are two claims 27 that recite the same limitation. For examining purposes, Examiner only interprets one of them. Applicant is advised to re-number the claim or cancel it. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 14-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 14, recites a computer-readable media, which is disclosed in the specification [paragraph 0026] as signals (e.g., carrier wave, wired networks, direct-wired connections, acoustic, radio, infrared, etc.). The specification provides intrinsic evidence that the computer-readable media is intended to cover signals, such are currently not believed to enable the computer-readable media to act as a computer hardware component and realizes its functionality absent being claimed in combination with the necessary hardware to receive and convert the signals to computer program product.

Claims 15-30 directly or indirectly depend on claim 1, and therefore, have been addressed in connection with the rejection set forth to claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

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351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 7, 12, 14, 15, 20, 25, and 27-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Southam et al. (United States Patent No.: US 6,920,410 B2).

As per claim 1:

Southam discloses a method for the code generation computing system to automatically generate code that tests capabilities of a test computing system to use a message exchange pattern application to engage in message transactions following a message exchange pattern, the method comprising the following:

- an act of accessing a message exchange pattern definition ("**Once the actual network service WSDL files have been obtained...WSDL files are then used as inputs to a test environment generation system**" (this means, the WSDL files are accessed) col. 5, line 46-51; "**mock network services 110 are created with reference to public interface, such as a web service description language (WSDL) files**" (this means, WSDL is accessed to create mock network services 110) col. 5, line 36-38) that defines a plurality of states, the message exchange pattern definition further having for each of the plurality of states, an indication of one or more valid messages that conform to the message exchange pattern for that state, an indication of which computing system may transmit each valid message given the state, and a state transition indication for at least some of the valid messages identifying one of the

plurality of states to transition to should the valid message occur (**“these files provide the skeletal data structures of the actual network services 108 and therefore describe the interfaces of the actual network services. The WSDL files identify the structure of the inputs or requests that the structure of the actual network services 108 may received, and the output or responses that can be expected from those inputs or requests”** (WSDL files define a plurality of states (requests and responses). They also identify the network services 103 transmitted (requests and responses) the messages. Requests and responses in network services 108 are valid messages) col. 5, line 49-45);

- for each state in which the message exchange pattern definition allows a valid transmission message to be transmitted by the test computing system, an act of generating code that at least simulates transmission of the valid transmission message, and that transitions to other code that represents the state to transition to should the valid transmission message be transmitted (**“the mock clients 102 are, for example, generated from the WSDL information associated with the testee service”** (mock clients 102 contains code that emulate the requests of valid message) col. 6, line 5-6, see col. 3, line 6-18 for the mock clients 102); and

- for each state in which the message exchange pattern definition allows a valid receipt message to be received, an act of generating code that simulates the receipt of the valid receipt message, and that transitions to other code that represents the state to transition to should the valid receipt message be received (**"the test environment generation system is also used to instantiate or otherwise generate the one or more mock network services 110 that are placed in communication with the testee service 104"** (mock network services 110 contains code that emulates the receipt of the valid message) col. 6, line 7-9, see col. 4, line 50-67 for the mock network services 110).

As per claim 2:

Southam discloses the method as in claim 1 above; and further discloses:

- wherein the message exchange pattern definition indicates that when in a particular state, any one of a plurality of valid transmission messages may be transmitted (**it is inherent in Southam's approach because WSDL files identify the requests and responses (valid messages) of network services 108**).

As per claim 7:

Southam discloses the method as in claim 1 above; and further discloses:

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- wherein the message exchange pattern definition indicates that when in a particular state, any one of a plurality of valid receipt messages may be received (**"the WSDL files identify the structure of the inputs or requests that the structure of the actual network services 108 may receive"** col. 5, line 42-43).

As per claim 12:

Southam discloses the method as in claim 1 above; and further discloses:

- wherein the message exchange pattern definition is defined using the Web Services Description Language (WSDL) standard (**"web service description language (WSDL) files"** col. 5, line 37).

As per claims 14, 15, 20, and 25:

- computer program product claims, recite the same limitations as recited in claims 1, 2, 7, and 12 respectively, and therefore, have been addressed in connection with the same rejection set forth to claims 1, 2, 7, and 12 respectively.

As per claim 27:

Southam discloses the computer program product as in claim 14 above; and further discloses:

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- wherein the one or more computer-readable media are physical media
 (**“computer-readable medium is any electronic, magnetic, optical, or
other physical device”** col. 7, line 3-4).

As per claim 28:

Southam discloses the computer program product as in claim 27 above; and
further discloses:

- wherein the one or more computer-readable media includes system
 memory (**“the memory 204 comprises various program, in software,
and/or firmware...”** col. 6, line 49-50).

As per claim 29:

Southam discloses the computer program product as in claim 27 above; and
further discloses:

- wherein the one or more computer-readable media includes persistent
 memory (**“the memory 204 includes any one of a combination of
volatile memory elements (e.g., random access memory (RAM)...”**
 col. 6, line 26-28).

As per claim 30:

Southam discloses the computer program product as in claim 29 above; and
further discloses:

- wherein the persistent memory is a magnetic disk ("**hard disk**") (hard disk is one form of magnetic disk) col. 6, line 28).

As per claim 31:

Southam discloses in a code generation computing system that includes one or more processors capable of executing computer-executable instructions in system memory, a method for the code generation computing system to automatically generate code that tests capabilities of a test computing system to use a message exchange pattern application to engage in message transactions following a message exchange pattern, the method comprising the following:

- an act of accessing a message exchange pattern definition that defines a plurality of states ("**Once the actual network service WSDL files have been obtained...WSDL files are then used as inputs to a test environment generation system**") (this means, the WSDL files are accessed) col. 5, line 46-51; "**mock network services 110 are created with reference to public interface, such as a web service description language (WSDL) files**" (this means, WSDL is accessed to create mock network services 110) col. 5, line 36-38), the message exchange pattern definition further having for each of the plurality of states, an indication of one or more valid messages that conform to the message exchange pattern for that state, an indication of which computing system may transmit each valid message given the state, and a state transition

indication for at least some of the valid messages identifying one of the plurality of states to transition to should the valid message occur ("**these files provide the skeletal data structures of the actual network services 108 and therefore describe the interfaces of the actual network services. The WSDL files identify the structure of the inputs or requests that the structure of the actual network services 108 may received, and the output or responses that can be expected from those inputs or requests**" (WSDL files define a plurality of states (requests and responses). They also identify the network services 103 transmitted (requests and responses) the messages. Requests and responses in network services 108 are valid messages) col. 5, line 49-45); and

- a step for automatically generating message exchange pattern simulation code using the message exchange pattern definition ("**one or more mock network services 110 are created with reference to public interfaces, such as a web service description language (WSDL) files**" col. 5, line 36-38).

As per claim 32:

Southam disclose the method as in claim 31 above; and further discloses:

- wherein the step for automatically generating message exchange pattern simulation code using the message exchange pattern definition comprises the following:
 - o for each state in which the message exchange pattern definition allows a valid transmission message to be transmitted by the test computing system, an act of generating code that at least simulates transmission of the valid transmission message, and that transitions to other code that represents the state to transition to should the valid transmission message be transmitted; and for each state in which the message exchange pattern definition allows a valid receipt message to be received, an act of generating code that simulates the receipt of the valid receipt message, and that transitions to other code that represents the state to transition to should the valid receipt message be received (**"the mock clients 102 are, for example, generated from the WSDL information associated with the testee service"** (mock clients 102 contains code that emulate the requests of valid message) col. 6, line 5-6, see col. 3, line 6-18 for the mock clients 102).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 4, 6, 8, 9, 11, 16, 17, 19, 21, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southam et al. (United States Patent No.: US 6,920,410 B2), in view of Trevithick et al. (United States Patent Application Publication No.: US 2002/0116466 A1).

As per claim 3:

Southam discloses the method as in claim 2 above; and further discloses:

- wherein the method further comprises automatically generating code for at least simulating each of the plurality of valid transmission messages (**"the mock clients 102 are generated from the WSDL information associated with the testee service"** col. 6, line 5-6; **"a network service can be tested in an emulated operating environment by providing mock clients that submit requests to the network service"** col. 2, line 41-43) and performing appropriate state transitions given the transmission (**"submit requests to the network service"** col. 2, line 43).

Southam does not explicitly disclose:

- wherein the message exchange pattern definition indicates for each of the plurality of valid transmission messages for the particular state, a percentage chance that each of the plurality of valid transmission messages will be transmitted given the particular state.

However, Trevithick discloses an analogous method:

- wherein the message exchange pattern definition indicates for each of the plurality of valid transmission messages for the particular state, a percentage chance that each of the plurality of valid transmission messages will be transmitted given the particular state (**"the pattern in the messages may corresponding, for example, to a frequency of interaction, a latency in response, a latency in completion, a successful completion ratio (percentage), a nonresponsive ratio (percentage), an unsuccessful ratio (percentage)"** paragraph 007)

Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Southam's approach allowing WSDL files to include percentage of transmission message. One of ordinary skill in the art would have been motivated to modify in order to characterize the members of network based on the pattern message (paragraph 007).

As per claim 4:

Southam and Trevithick disclose the method as in claim 3 above; and Southam further discloses:

- an act of generating code that generates a pseudo-random value and selects one of the plurality of valid transmission messages for transmission based on the pseudo-random value and on the percentage chance (**"mock clients 102 comprise generic generic, data-driven**

code (i.e. the logic and functionality of the network service is determined by an underlying database)..." (Therefore, it is inherent for mock clients 102 to generate a pseudo-random value for transmission message) col. 4, line 50-51).

As per claim 6:

Southam discloses the method as in claim 5, but does not explicitly disclose:

- wherein there is also indicated a percentage chance that the invalid transmission messages will be transmitted given the particular state, wherein the method further comprises an act of generating code that generates a pseudo-random value and selects one of the invalid transmission message for transmission based on the pseudo-random value and on the percentage chance.

However, Trevithick disclose an analogous method that indicates percentage chance that the invalid transmission messages will be transmitted given the particular state (**"the pattern in the messages may corresponding, for example, to a frequency of interaction, a latency in response, a latency in completion, a successful completion ratio (percentage), a nonresponsive ratio (percentage), an unsuccessful ratio (percentage).**

It would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Southam's approach allowing WSDL files to include percentage of transmission message in order to characterize the members of network

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based on the pattern message (paragraph 007). Therefore, Southam's mock network services 110 would have generated a pseudo-random value and select an invalid transmission message for transmission based on the generated pseudo-random value and ratio (percentage).

As per claim 8:

Southam discloses the method as in claim 7 above; and further disclose:

- wherein the method further comprises automatically generating code for simulating each of the plurality of valid receipt messages ("**generate the one or more mock network services 110 that are placed in communication with the testee service 104**" col. 6, line 8-9; "**a mock network service 110 that emulates operation of the actual network service 108 to which the testee service 104 attempted to send its request**" col. 7, line 35-37) and performing appropriate state transitions given the transmission ("**emulates operation of the actual network service 108**" col. 7, line 36).

Southam does not explicitly disclose:

- wherein the message exchange pattern definition indicates for each of the plurality of valid receipt messages for the particular state, a percentage chance that each of the plurality of valid receipt messages will be received given the particular state.

However, Trevithick discloses an analogous method:

- wherein the message exchange pattern definition indicates for each of the plurality of valid receipt messages for the particular state, a percentage chance that each of the plurality of valid receipt messages will be received given the particular state ("**the pattern in the messages may corresponding, for example, to a frequency of interaction, a latency in response, a latency in completion, a successful completion ratio (percentage), a nonresponsive ratio (percentage), an unsuccessful ratio (percentage)**" paragraph 007)

Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Southam's approach allowing WSDL files to include percentage of transmission message. One of ordinary skill in the art would have been motivated to modify in order to characterize the members of network based on the pattern message (paragraph 007).

As per claim 9:

Southam and Trevithick disclose the method as in claim 8 above; and Southam further discloses:

- an act of generating code that generates a pseudo-random value and selects one of the plurality of valid receipt messages for simulated receipt based on the pseudo-random value and on the percentage chance ("**the mock network services 110, like the mock clients 102, comprise generic, data-driven code.**" (Therefore, it is inherent for mock clients

102 to generate a pseudo-random value for transmission message) Col. 4, line 50-51).

As per claim 11:

Southam discloses the method as in claim 10, but does not explicitly disclose:

- wherein there is also indicated a percentage chance that the invalid receipt message will be received given the particular state, wherein the method further comprises an act of generating code that generates a pseudo-random value and selects one of the invalid received message for simulated receipt based on the pseudo-random value and on the percentage chance.

However, Trevithick disclose an analogous method that indicates percentage chance that the invalid receipt messages will be received given the particular state (**"the pattern in the messages may corresponding, for example, to a frequency of interaction, a latency in response, a latency in completion, a successful completion ratio (percentage), a nonresponsive ratio (percentage), an unsuccessful ratio (percentage).**

It would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Southam's approach allowing WSDL files to include percentage of receipt message in order to characterize the members of network based on the pattern message (paragraph 007). Therefore, Southam's mock network services 110 would have generated a pseudo-random value and select an invalid receipt

message for simulated receipt based on the generated pseudo-random value and ratio (percentage).

As per claims 16, 17, 19, 21, 22, and 24:

- computer program product claims, recite the same limitations as recited in claims 3, 4, 6, 8, 9, and 11 respectively, and therefore, have been addressed in connection with the same rejection set forth to claims 3, 4, 6, 8, 9, and 11 respectively.

10. Claims 5, 10, 18, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southam et al. (United States Patent No.: US 6,920,410 B2).

As per claim 5:

Southam discloses the method as in claim 1 above, but does not explicitly disclose:

- an act of generating code that at least simulates transmission of an invalid transmission message.

However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Southam's approach is capable of generating code that simulates (emulates) transmission of an invalid transmission messages. One of ordinary skill in the art would have been motivated to generate code that emulates transmission of an invalid transmission message in Southam's approach

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because his idea is to emulate transmission of messages. Emulating transmission of an invalid transmission message is the same as emulating transmission of a valid message (the idea is to emulate transmission messages).

As per claim 10:

Southam discloses the method as in claim 1 above, but does not explicitly disclose:

- an act of generating code that simulates receipt of an invalid transmission message.

However, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to recognize that Southam's approach is generating code that emulates receipt of an transmission messages ("**the WSDL files identify the structure of the inputs or requests that the structure of the actual network services 108 may receive**" col. 5, line 42-43). Therefore one of ordinary skill in the art would have been motivated to generate code that simulates (emulates) receipt of an invalid transmission message because the emulating receipt of an invalid transmission message is no different from emulating receipt of an valid transmission message. The idea is to emulate transmission messages.

As per claims 18 and 23:

- computer program product, recite the same limitations as recited in claims 5 and 10 respectively, and therefore, have been addressed in

connection with the same rejection set forth to claims 5 and 10 respectively.

11. Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southam et al. (United States Patent No.: US 6,920,410 B2), in view of Fremantle et al. (United States Patent Application No.: US 2004/0117199 A1).

As per claim 13:

Southam discloses the method as in claim 1 above, but does not explicitly disclose:

- wherein the message exchange pattern definition further defines timing policies to be imposed when in a particular state.

However, Fremantle discloses an analogous method using a WSDL document to define time service ("**The time service is described in a WSDL document**" paragraph 0024).

Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Southam's approach to have time service included in WSDL files. One of ordinary skill in the art would have been motivated to modify because time service ("**specifies a Port Type of Time and binding for the channel which specifies a transport mechanism of SOAP/HTTP...**" paragraph 0024).

As per claim 26:

- a computer program product, recites the same limitations as recited in claim 13, and therefore, has been addressed in connection with the rejection set forth to claim 13 above.

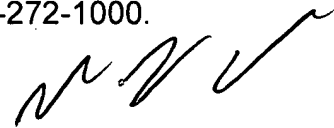
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip H. Nguyen whose telephone number is (571) 270-1070. The examiner can normally be reached on Monday - Thursday 10:00 AM - 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y. Zhen can be reached on (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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WEI ZHEN
SUPERVISORY PATENT EXAMINER

PN
03/13/2007